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### Random notes on Bermuda ferns

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The person who has lived in New England all his life is usually anxious to escape the typical New England slush and mud season of April—"the betwixt and between," as it were. For such a person, seeking a refuge where he may find agreeable weather and a place in which to botanize, "sunny" Bermuda has its attractions. Yet he must not expect to find Bermuda always sunny, and he must be willing to experience seasickness.

For the fern student alone, Bermuda may be disappointing. Instead of a great number of luxuriant ferns, as one might expect, the island boasts of only twenty-five species and varieties, according to an article by the late B. D. Gilbert in the Bulletin of the Torrey Botanical Club [25: 593-604. 16 D 1898]. Doubtless this list of Gilbert's, which I found extremely helpful, may need some corrections and some additions. In the library at Hamilton, Bermuda, I consulted two or three books relating to the flora of the islands. Of these the most valuable were the botanical volumes of the Reports of the Challenger Expedition. Some of the Bermuda ferns are extremely rare, and fortunate indeed is the botanist who finds them all. Bermuda has so many attractions that I was able to give but little time to ferns alone. Yet, in my desultory collecting I succeeded in finding specimens of all the species mentioned in this article.

Undoubtedly the most abundant fern in the islands is the little maidenhair, *Adiantum bellum* Moore. This rock-loving fern is found everywhere, growing on walls, in stone quarries, around the caves, and in almost every roadside cut. In dry exposed places the fronds are barely two or three inches long. Nevertheless these small fronds are very heavily fruited. Whenever this fern is found in moist, shady places, as in the cave regions

of Walsingham, the fronds are often eight inches in length and not so heavily fruited. These specimens doubtless approach the variety *walsingense* named by Gilbert. At Fern Cave, a cave well named, on the estate of the German consul, I found specimens of an *Adiantum* which Dr. R. C. Benedict, who has kindly examined my Bermuda specimens, identified as *A. tenerum* Sw., a species not given in Gilbert's valuable list.

Another fern common about the city of Hamilton, on the walls and roadside cuts, wherever a particle of earth has lodged, is *Pteris longifolia* L. Wherever this plant has secured a footing in good rich soil at the base of some wall or similar situation, it bears fronds fourteen inches long or longer.

The other ferns of the island seem confined for the most part to one of two places, the so-called marshes, in three of which I botanized, and the Walsingham tract. In this latter place are numerous limestone caves and sink holes about which the ferns grow. Of the marshes, Devonshire is probably the largest. This marsh, acres and acres in extent, is completely covered with a growth of ferns. Most abundant of all is our own cinnamon fern, *Osmunda cinnamomea* L. Here I found one frond of the variety *frondosa* Gray. Common also are the chain fern, *Woodwardia virginica* (L.) Sm., the royal fern, *Osmunda regalis* L., the brake, *Pteridium caudatum* (L.) Maxon, and *Acrostichum excelsum* Maxon. This fern, found also in Paget Marsh, is luxuriant in growth and often attains a height of eight feet. Another fern native to the United States, *Dryopteris thelypteris* (L.) A. Gray, was found sparingly in Devonshire and Pembroke marshes. Pembroke Marsh, several acres in area, is drained by a ditch, four or five feet in width, the surface of which is in places completely covered with *Salvinia natans* Hoffm. and the water hyacinth.

Another rather common fern, found along the borders

of Devonshire Marsh and along the roadside in a few places is *Dryopteris patens* (Sw.) Ktze.

On a wall along the middle Devonshire road small plants of an *Asplenium* were found which Doctor Benedict calls *A. trichomanes* L. Certainly the plants seem exactly like those of our own species. At first I called them dwarfed or stunted plants of *A. muticum* Gilbert, for which I had been looking, but probably the true *A. muticum* is found only in the Walsingham tract. The fronds of this pretty fern as found in Walsingham, grow nearly erect, are ten or more inches long, and bear pinnae more finely cut than those of our *A. trichomanes*. In crevices of rocks in this same Walsingham tract is found *Polypodium plumula* HBK. and the rare interesting fern ally, *Psilotum nudum* (L.) Griseb. Other botanists report finding magnificent specimens of this odd plant growing at the bases of the trunks of palmetto trees in Paget Swamp. Fairly abundant in the Walsingham region are *Nephrolepis exaltata* Schott and *Asplenium dentatum*, a delicate little fern found on moist rocks about Joyce's Doch Cave, Church Cave, and Fern Cave. At Church Cave, once famous for its rare ferns but now nearly stripped of them all, I found but two plants of the rare *Anopteris heterophylla* (L.) Diels, while at Joyce's Doch Cave I found a single sterile frond of a fern as yet unidentified. The last ferns on my list are *Dryopteris Speluncae* (L.) Und., two plants of which were found in Paynter's Vale, and *Dryopteris bermudiana* (Baker) Gilbert, an endemic species.

Ferns are not abundant in Bermuda. One might spend a day in driving, and without passing one of the three large marshes would probably see only two ferns, *Pteris longifolia* L. and the ever-abundant maidenhair, *Adiantum bellum* Moore, found so far only in Bermuda.

A set of nearly all the species collected has been deposited in the herbarium of the American Fern Society.

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